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New England divines. They will remind the reader more of French than of English sermons. We find in them vivid pictures, animated appeals, and warm exhortations, rather than elaborate expositions of doctrine, or arguments addressed to the understanding. The preacher is more solicitous to impress acknowledged truths than to maintain disputed propositions. The strain of remark and illustration is sometimes the more effective from its plainness and directness. The faults and short-comings of humanity are pointed out, without any circumlocution or paraphrase, in those terse and unmistakable terms which arrest the attention and cling to the memory.

The defects of the sermons are those to which compositions written for oral delivery are most exposed. The style is occasionally too exuberant, diffuse, and declamatory. Some of the paragraphs read coldly, and seem a little overdone; though with the aid of the voice, countenance, and gesture of an animated and impressive speaker, no such defect would probably have been observed.

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3. — *Tables of Bearings, Distances, Latitudes, Longitudes, &c., ascertained by the Astronomical and Trigonometrical Survey of Massachusetts.* Published agreeably to a Resolve of the General Court, by JOHN G. PALFREY, Secretary of the Commonwealth. Boston: Dutton & Wentworth, State Printers. 1846. 8vo. pp. 73.

In an article upon the trigonometrical survey of this State,\* our readers were informed, that "the legislature had ordered to be printed and distributed to the different towns and clerks of courts the positions and details of the stations throughout the State, as determined by the trigonometrical survey, accompanied by such other matter obtained in executing the work as may be useful in laying out roads, and in the measurement of towns. The preparation of this work, requiring considerable labor and judgment, devolves upon Dr. Palfrey, the Secretary of State." This publication is now before us, and an enumeration of its contents will not be useless, if it helps to call the attention of surveyors, engineers, astronomers, and mariners to what may be in a high degree serviceable to them in their various pursuits.

In constructing the State map, Mr. Borden, "for greater accuracy and convenience," divided the State into five sections.

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\* *North American Review*, Vol. LXI., pp. 467, 468.

For each of these sections there are four tables, in which are given the relative positions and distances of the primary and secondary points, the latitudes and longitudes of the same stations, and their bearings and distances from an assumed principal point of the triangulation. The explanations necessary to make these tables available to the most unpractised are supplied, together with examples of their use. The "three-point problem," which may be so advantageously employed in connection with these tables to determine the position of the observer when three sections forming a triangle are in sight, is also explained and applied. The primary and secondary lines are so numerous, and may be multiplied to such an extent by means of the third and fourth tables of each section, that a surveyor may now almost always find a known azimuth for determining the variation of the needle, and the local attraction, if any exists. The method of doing this is fully displayed.

In the introduction to this compilation, we find a formula for computing the bearings and distances where the latitudes and longitudes only are expressed, another for computing the latitudes and longitudes of points not heretofore calculated, and a general formula for computing latitudes and longitudes on the surface-sphere. As a necessary accompaniment to the second formula, tables are added containing the values, in feet and hundredths, for every change of minute in latitude, both on the meridian and on the parallels between  $43^{\circ} 1'$  and  $41^{\circ} 12'$ . The values of the constants in the last formula are also given, by which any person is enabled to use it easily. Mr. Borden's determination of the figure and magnitude of the earth from the data afforded by the Massachusetts survey, and the comparison of these elements with those which M. Bessel deduced from the mean of ten trigonometrical surveys measured in different parts of the world, give additional scientific interest and value to this part of the work.

We were aware of the labor and judgment necessary to accomplish this work under the most favorable circumstances; and many unforeseen difficulties have increased both the care and responsibility of the editor. They have been overcome with so much success, that we believe, after careful examination, that no error of any importance is to be found in it, except the omission by the engraver of an important line from the south end of the base to Mount Lincoln.

Dr. Palfrey, however, in his "Advertisement," has repeated a statement once made in our own pages, and since found to be entirely incorrect. In the paper on the Massachusetts survey already referred to, we said that the base apparatus used by Mr. Borden had been adopted in the United States coast survey. The assertion

in both instances was made upon the same authority ; and it was an authority quite sufficient, if we consider only the position of our informant, and his right or duty to be acquainted with the subject. Therefore, though we were misled, it was not in consequence of any carelessness or indifference. We improve the first occasion to correct the error, and to say, that, when Dr. Bache, the superintendent of the coast survey, publishes a description of the base apparatus designed and used by himself, it will be found to differ in many essential respects from the one invented by Mr. Borden. In saying this, we do not, of course, intend to compare the merits of the two plans.